



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:  
06.05.1999 Bulletin 1999/18

(51) Int. Cl.<sup>6</sup>: G06F 9/44

(21) Application number: 98120428.2

(22) Date of filing: 28.10.1998

(84) Designated Contracting States:  
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU  
MC NL PT SE  
Designated Extension States:  
AL LT LV MK RO SI

(72) Inventors:  
• Fresko, Nedim  
San Francisco, California 94122 (US)  
• Tuck, Richard  
San Francisco, California 94114 (US)

(30) Priority: 31.10.1997 US 961874

(74) Representative:  
Goddard, Heinz J., Dr.  
FORRESTER & BOEHMERT  
Franz-Joseph-Strasse 38  
80801 München (DE)

(71) Applicant:  
SUN MICROSYSTEMS, INC.  
Palo Alto, California 94303 (US)

(54) **Method and apparatus for pre-processing and packaging class files**

(57) A method and apparatus for pre-processing and packaging class files. Embodiments remove duplicate information elements from a set of class files to reduce the size of individual class files and to prevent redundant resolution of the information elements. Memory allocation requirements are determined in advance for the set of classes as a whole to reduce the complexity of memory allocation when the set of classes are loaded. The class files are stored in a single package for efficient storage, transfer and processing as a unit. In an embodiment, a pre-processor examines each class file in a set of class files to locate duplicate information in

the form of redundant constants contained in a constant pool. The duplicate constant is placed in a separate shared table, and all occurrences of the constant are removed from the respective constant pools of the individual class files. During pre-processing, memory allocation requirements are determined for each class file, and used to determine a total allocation requirement for the set of class files. The shared table, the memory allocation requirements and the reduced class files are packaged as a unit in a multi-class file.

FIGURE 2

